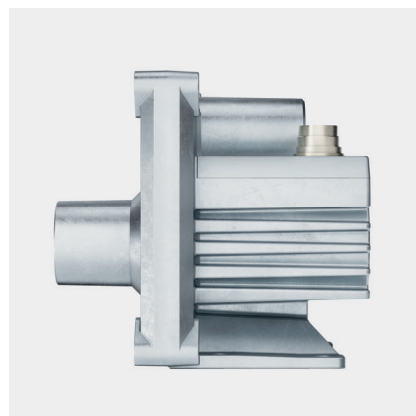
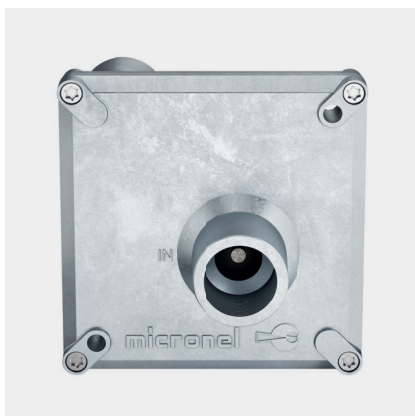
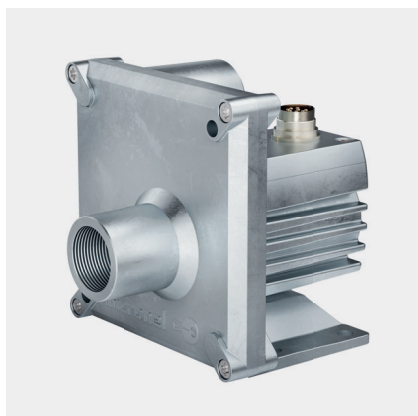


## SPECIFICATION

# Micronel Radial Blower

## U100UL-024KA-4



### GENERAL INFORMATION

#### Item

Product type	Radial blower with integrated electronic motor driver
Article no.	U100UL-024KA-4
Manufacturer	Micronel AG
Customer	N/A
Project no.	N/A
Modification	Standard product

### APPLICATIONS

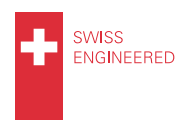
The versatile, high-power Micronel blower type U100UL-024KA-4 can be used for industrial applications, where highest vacuum or pressure performance is needed, i.e. for pick and place applications, particles and liquids suction and many more.

### FEATURES

- Pressure: 114 hPa, flow rate: 865 l/min
- 24 V<sub>DC</sub> brushless DC-motor
- Solid aluminum housing
- For harsh industrial environments
- Ingress protection (EN60529) IP67
- Speed control and tacho frequency output
- G3/4 inch thread at inlet and outlet

### GENERAL CONDITIONS

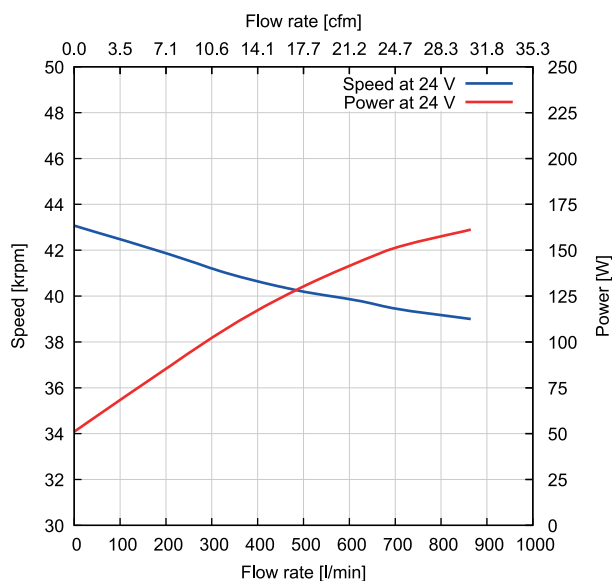
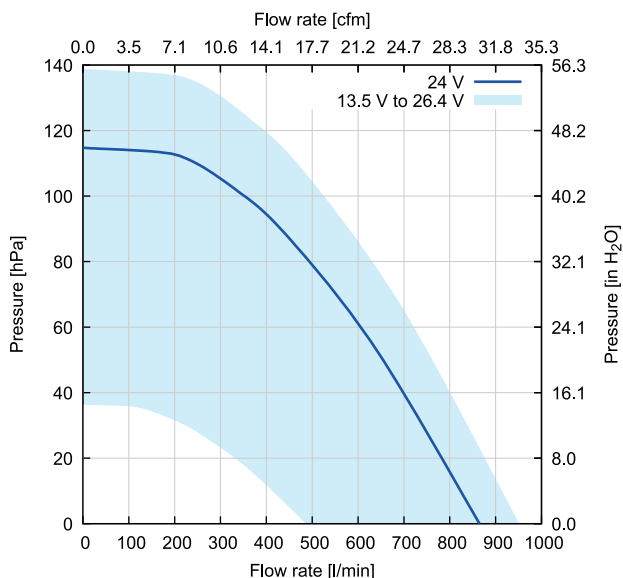
Unless otherwise stated all data are measured at nominal voltage and are valid at 20 °C ambient temperature and 1.2 kg/m<sup>3</sup> standard air density. Values listed are nominal and can vary depending on the installation conditions and due to component tolerances. Test setup according to ISO 5801 with standardized inlet and outlet chambers. Tolerances based on specified speed data according to ISO 13348, grade 4: pressure +/-10 %, power +16 %. Tolerances based on constant voltage: speed +/-10 %, pressure +/-21 %, power +33 %. For continuous blower operation please refer to specified maximum ratings. Performance data outside normal operating range plotted for information only.



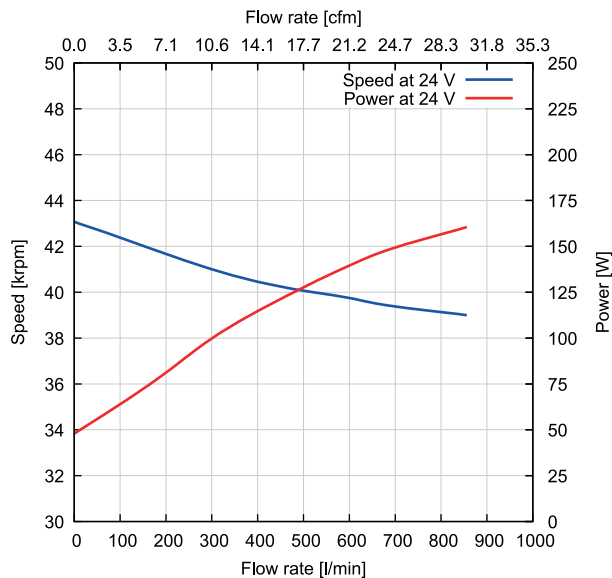
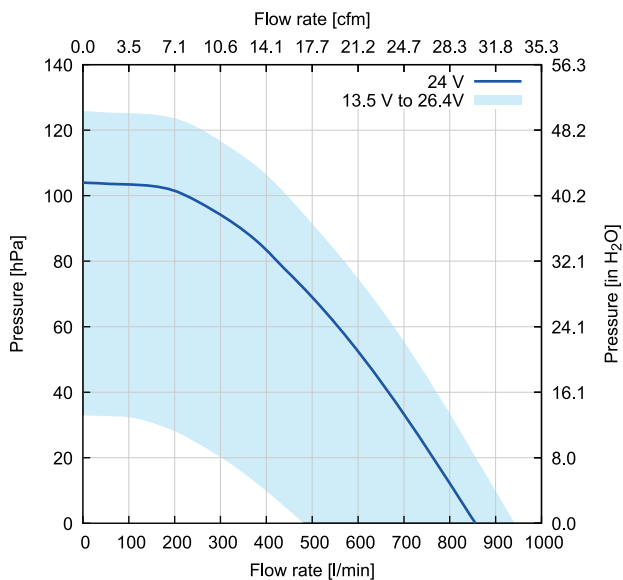
DECLARATION OF  
CONFORMITY  
NON-USE OF  
CONFLICT MINERALS

**PERFORMANCE**

**Pressure Operation at Outlet**



**Vacuum Operation at Inlet**



**Shut-Off in Pressure Operation (Zero Flow Rate)**

	Unit	Value
Static pressure	[hPa]	114
Power consumption	[W]	51
Speed	[rpm]	43000

**Shut-Off in Vacuum Operation (Zero Flow Rate)**

Static pressure	[hPa]	104
Power consumption	[W]	48
Speed	[rpm]	43000

**Free-Air (Zero Static Pressure)**

Flow rate	[l/min]	865
Power consumption	[W]	161
Speed	[rpm]	39000

**TECHNICAL DATA**

<b>Electrical</b>	<b>Unit</b>	<b>Value</b>
Nominal voltage	[V <sub>DC</sub> ]	24
Voltage range	[V <sub>DC</sub> ]	13.5 to 26.4
Minimum power supply current <sup>(1)</sup>	[A]	10
Maximum start-up time	[s]	3.0
Maximum ripple voltage	[%]	5
<b>Maximum Ratings for Continuous Operation</b>		
Minimum flow rate	[l/min]	161
Maximum speed	[rpm]	43000
Maximum acceleration	[rpm/ms]	N/A
Maximum power consumption	[W]	161
Maximum housing surface temperature	[°C]	N/A
Maximum NTC temperature	[°C]	85
<b>Environmental</b>		
Ambient temperature (operating)	[°C]	-20 to 45
Ambient temperature (storage)	[°C]	-20 to 65
Relative humidity (noncondensing)	[%RH]	10 to 85
Ingress protection (EN60529)		IP67
Maximum oxygen concentration <sup>(2)</sup>	[%]	N/A
<b>Motor</b>		
Type		Brushless direct current motor
Winding insulation class		H, 180 °C
NTC type		TDK NTCG164KF104F -40 to 125 °C, 100 kΩ, B <sub>25/100</sub> = 4508 K
<b>Lifetime</b>		
L10 at 25 °C ambient temperature <sup>(3)</sup>	[h]	20000
<b>Acoustics</b>		
Sound pressure level	[dB(A)]	55
<b>Leak Tightness</b>		
Maximum leak flow rate	[l/min]	N/A
<b>Mechanical</b>		
Blower weight	[g]	875

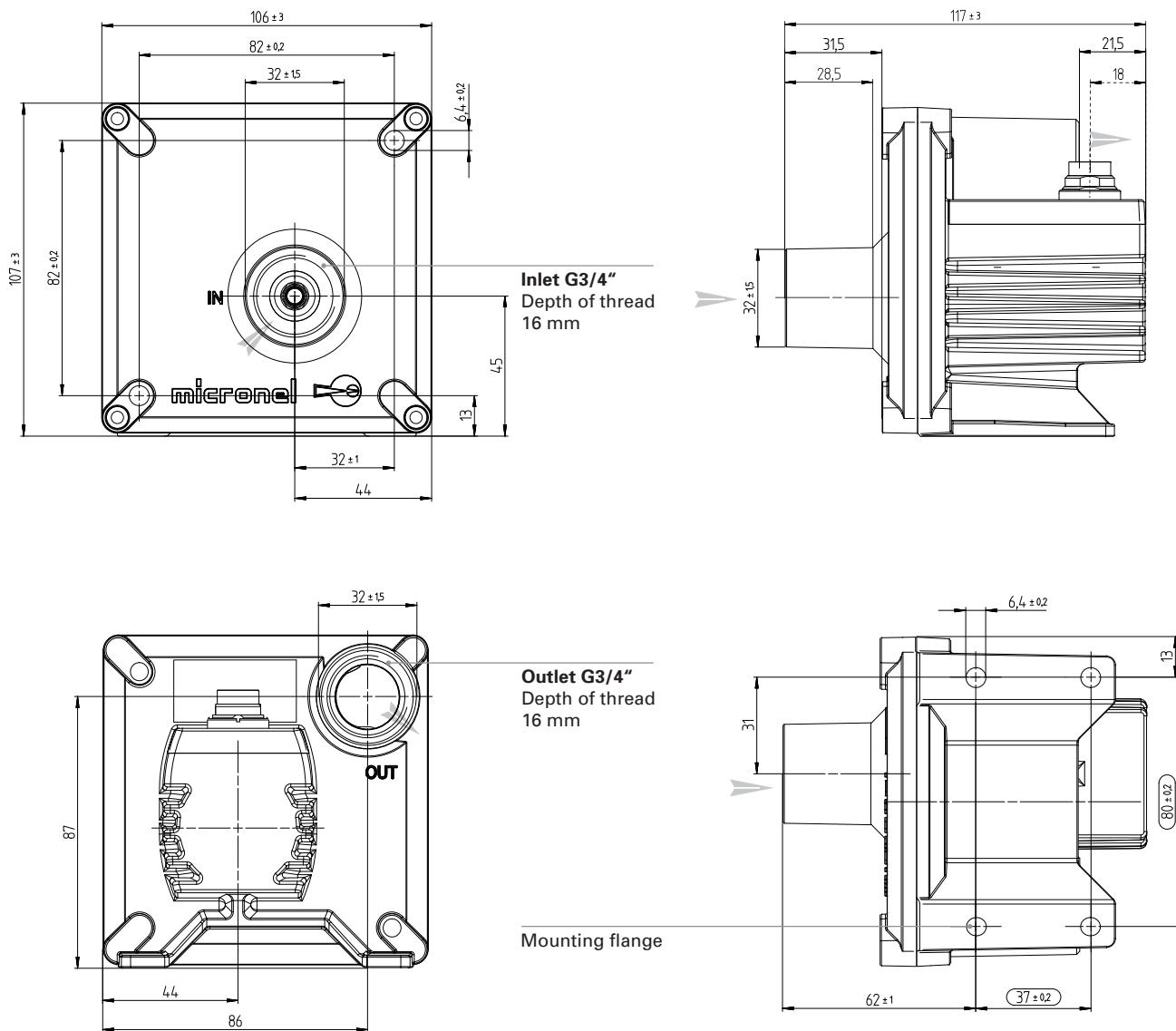
<sup>(1)</sup> Recommended minimum continuous power supply current for proper start-up behavior at nominal voltage. This is an indicative value. Power supply dimensioning, wiring, safety, setup and validation is the customer's responsibility.

<sup>(2)</sup> Micronel blowers are designed for various levels of oxygen compatibility. Further information available on request.

<sup>(3)</sup> Accelerated aging test at 45 °C ambient temperature, continuous operation, flow control with 4.5 mm diameter orifice plate at outlet, normal cleanliness according to ISO 281. Temperature dependency of lifetime according to IPC-9591: factor 1.5 per 10 °C.

**DRAWINGS**

Dimensions in mm



**Orientations**

Direction of rotation  
Mounting position

↻ Counter-clockwise (view on inlet)  
Any direction

## MATERIALS

Components	Material
Fan housing	Aluminum, anodized, natural color
Impeller	Polyamide (PA6)
Hub	N/A
Motor housing	Aluminum, natural color
Label	Polyester, Flammability: UL 969
Connector	Body: Nickel plated brass Pin contacts: Brass, gold plated Protection class: IP67
Crimp terminal	N/A
Lead wire	N/A

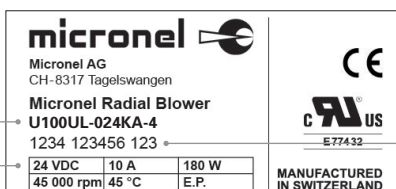
## IDENTIFICATION

### Label

Design

Article number

Nominal voltage



Identification number:

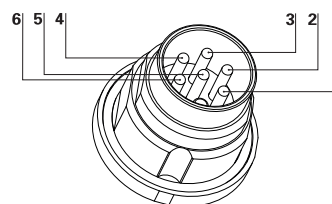
- Year, calendar week (YYWW)
- Fabrication number (6 digits)
- Serial number (3 digits)

## BLOWER PINOUT

Micronel Radial Blower  
U100UL-024KA-4



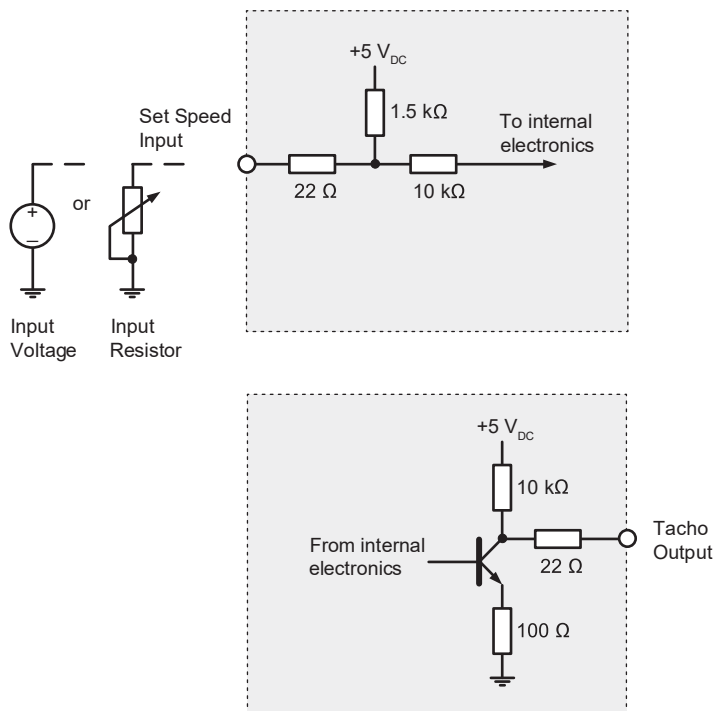
Pin	Color	Description	AWG
1	White	NTC <sup>+</sup>	24
2	Red	V <sub>CC</sub>	14
3	Black	GND	14
4	Green	Set speed input	24
5	Yellow	Tachometer output	24
6	Blue	NTC	24



**ELECTRONIC FUNCTIONS**

**Integrated Electronic Motor Driver**

Type	Micronel brushless direct current motor driver
Features	<ul style="list-style-type: none"> <li>• Integrated speed control (analog / resistive)</li> <li>• Tachometer frequency signal</li> <li>• Locked rotor protection</li> <li>• Over current protection</li> </ul>



**Speed Control Input**

The blower speed can be controlled by either input voltage or input resistor value. See „Set Speed Input“ table for further details.

**Tachometer Output**

Tachometer frequency:  
3 pulses per revolution

$n = 20 \cdot f$

**n** Rotation speed [rpm]  
**f** Tacho frequency [Hz]

Set Speed Input Voltage [V <sub>DC</sub> ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set Speed to ground	Stop
0.0 to 0.2	Stop
0.2 to 1.6	Not defined, blower might run or stop
2.0	Minimum start-up voltage
1.6 to 4.1	Blower speed depends on duty cycle
4.1 to 5.0	Blower speed at 100 %

Set Speed Input Resistor [kΩ]	Operation Mode
Set speed not connected	Blower speed at 100 %
Set speed to ground	Stop
0.0 to 0.047	Stop
0.047 to 0.72	Not defined, blower might run or stop
1.0	Minimum start-up voltage
0.72 to 6.8	Blower speed depends on resistor value
> 6.8 or open input	Blower speed at 100 %

## ACCESSORIES

Not included!

**Micronel Cable U100-M16-P6****Suitable for blower**Micronel Radial Blower  
U100UL-024KA-4**Micronel Cable U100-M16-P6****Suitable for blower**Micronel Radial Blower  
U100UL-024KA-4Handle in power-off conditions only!  
Read operating manual!Please see separate accessories list or contact  
Micronel Sales for a full list of options and  
accessories.All data are subject to change without advanced notice.  
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